

Figure 1 A ribbon growing perpendicularly from a free melt surface.

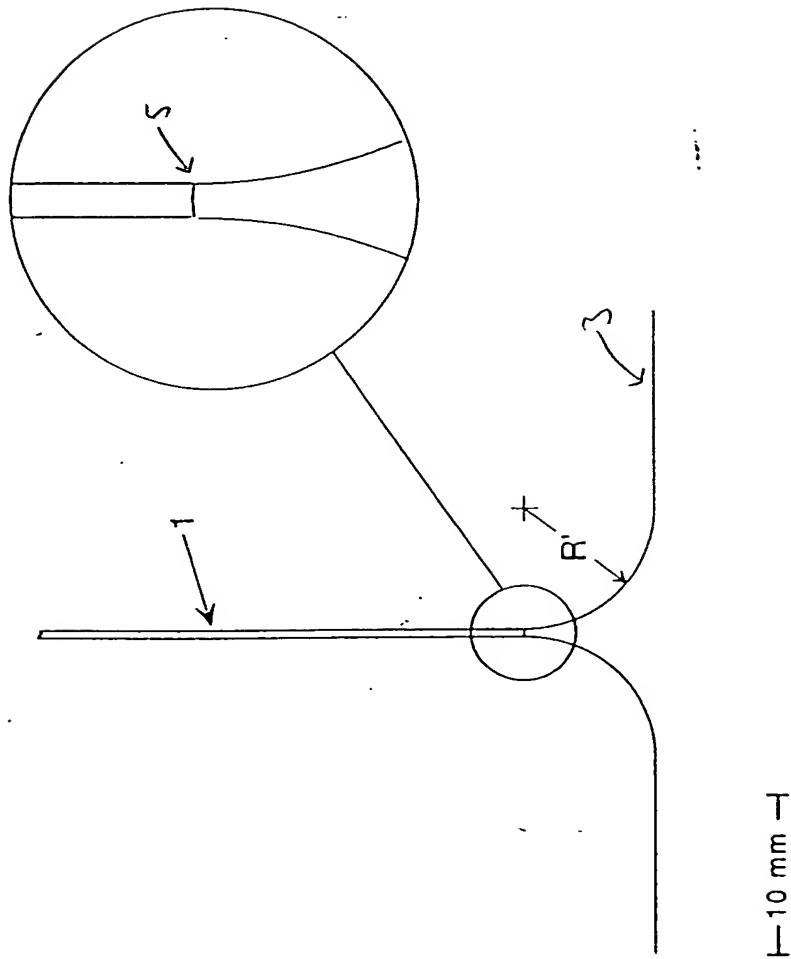


Figure 2 Constant Curvature Approximation

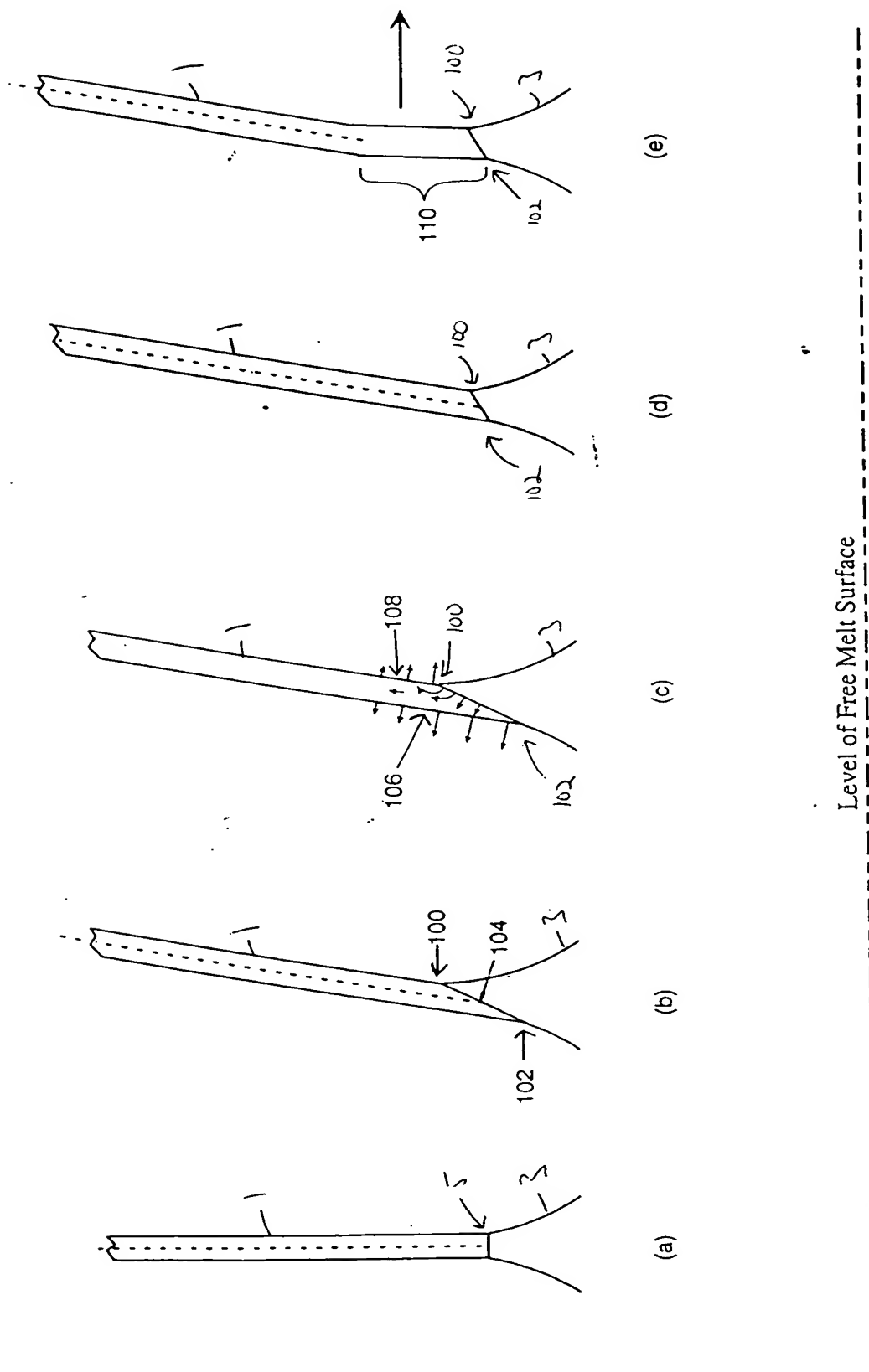


Figure 3. A sequence showing how pulling at an angle to the melt results in changes to the height of the interface.

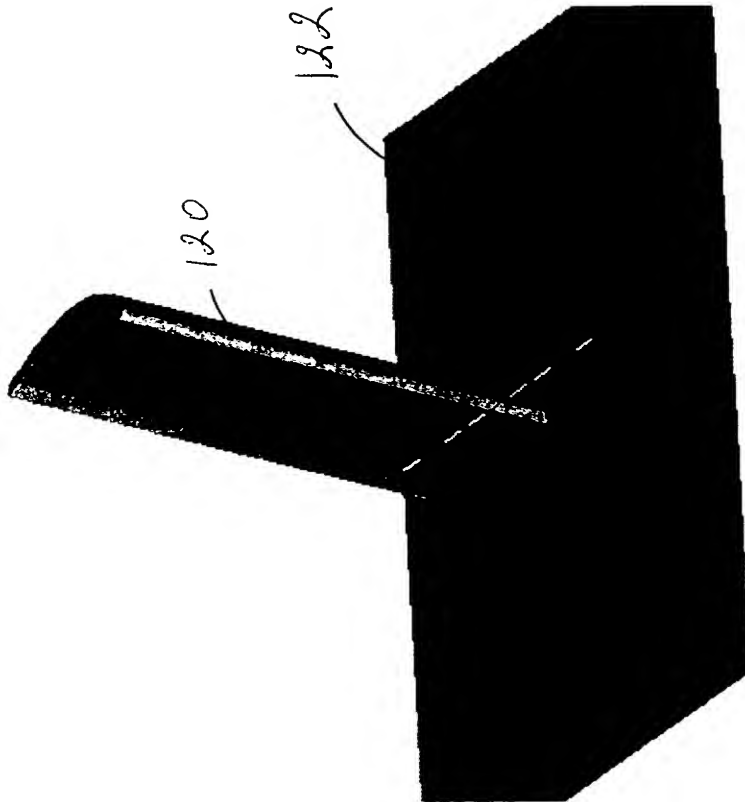


Figure 4

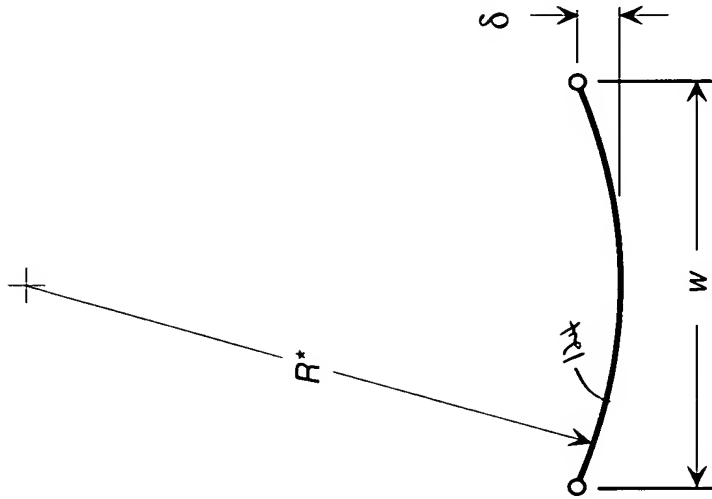


Figure 5. The relationship between the width of a ribbon, the radius of its trough and the depth of the trough.

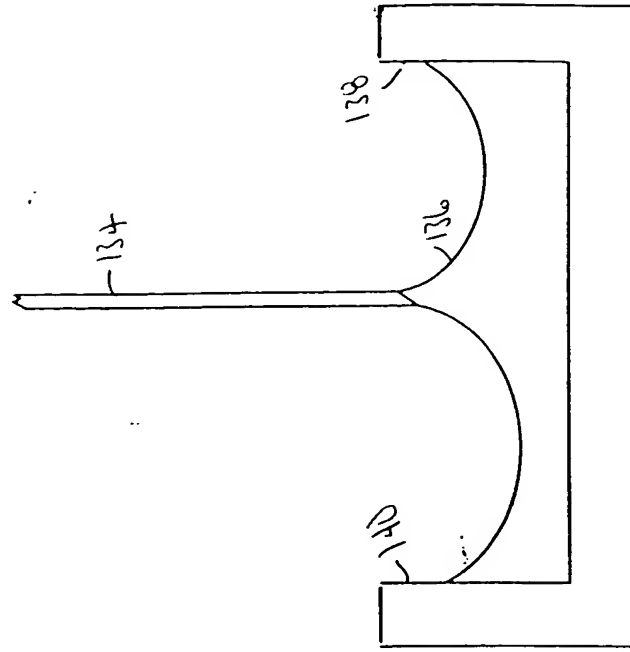


Figure 6b. A ribbon growing displaced from the center of a narrow crucible.

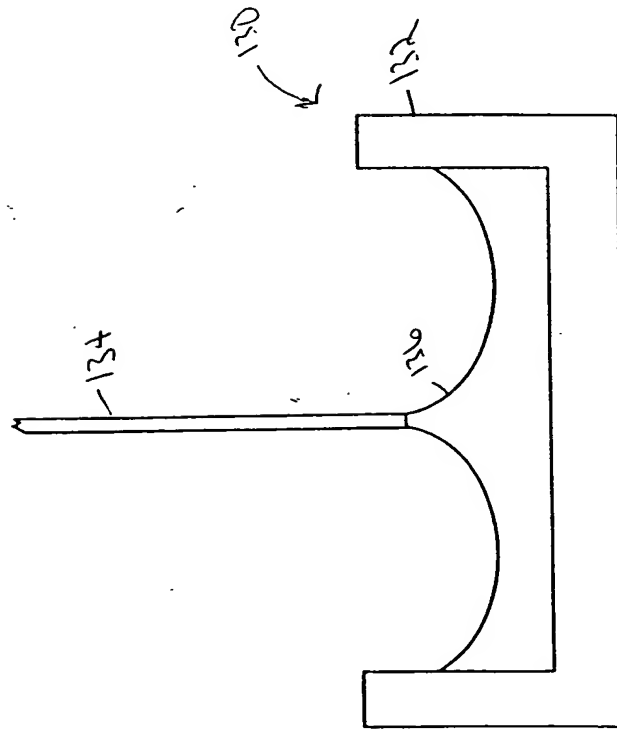


Figure 6a. A ribbon growing from the center of a narrow crucible.

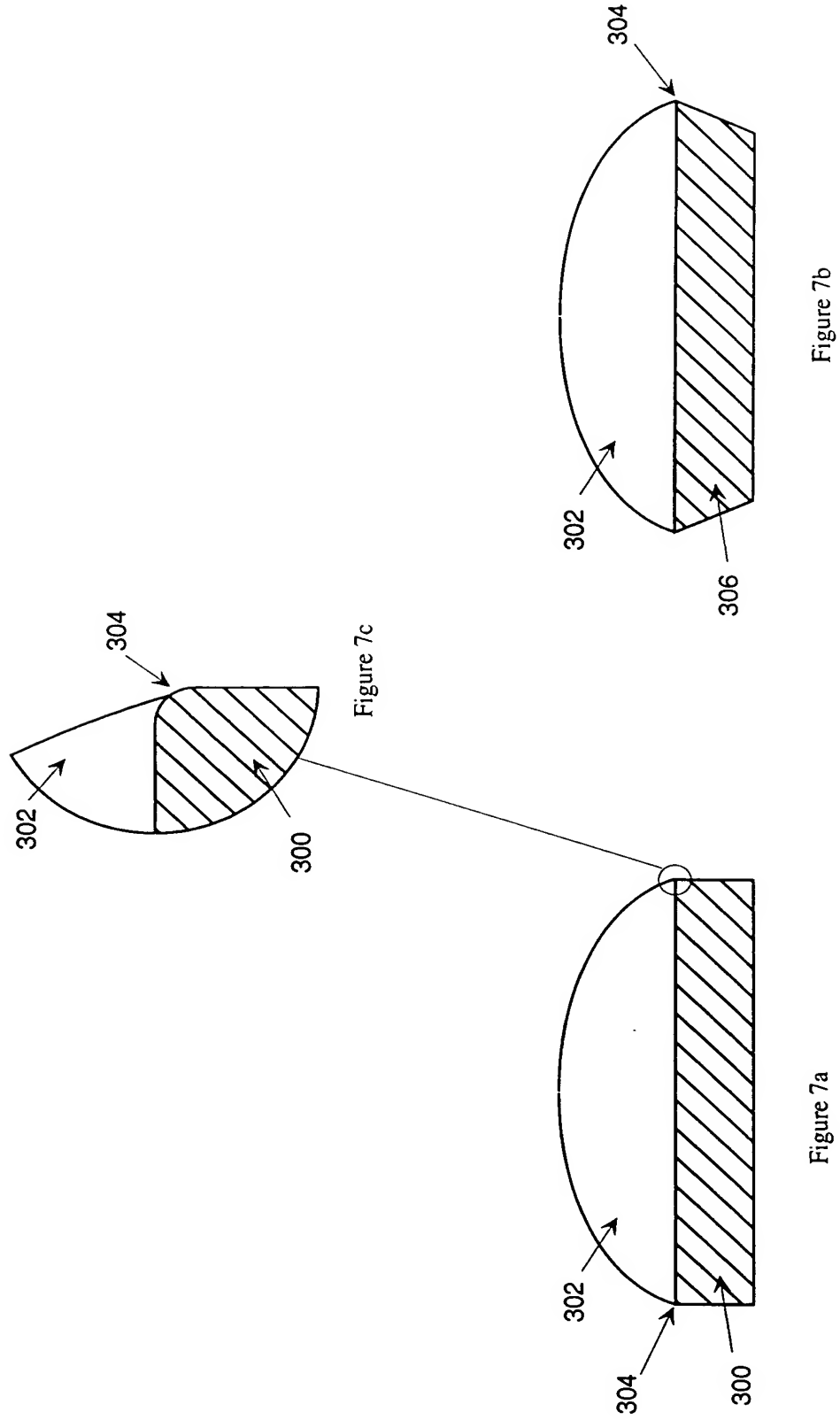


Figure 7. A melt pool on top of a mesa.

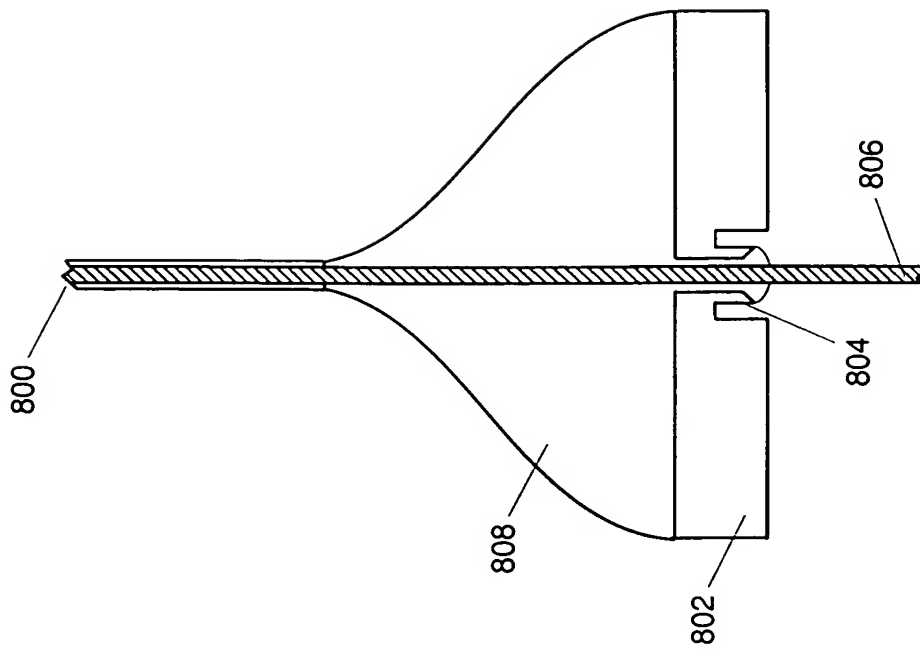


FIGURE 8. A ribbon growing from a mesa.



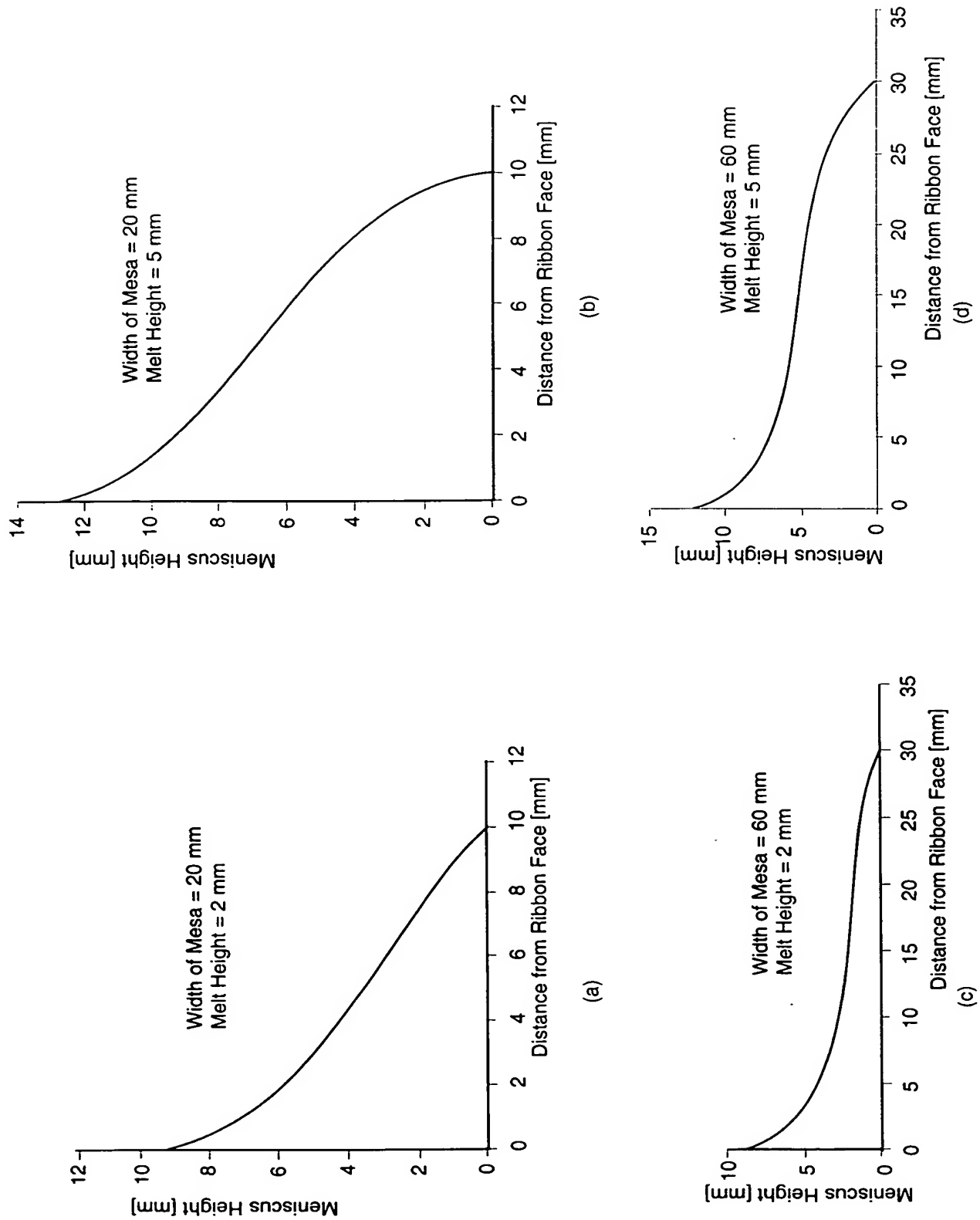


Figure 9A – D.. Four example of the shape of the meniscus from growth of ribbon from a mesa.

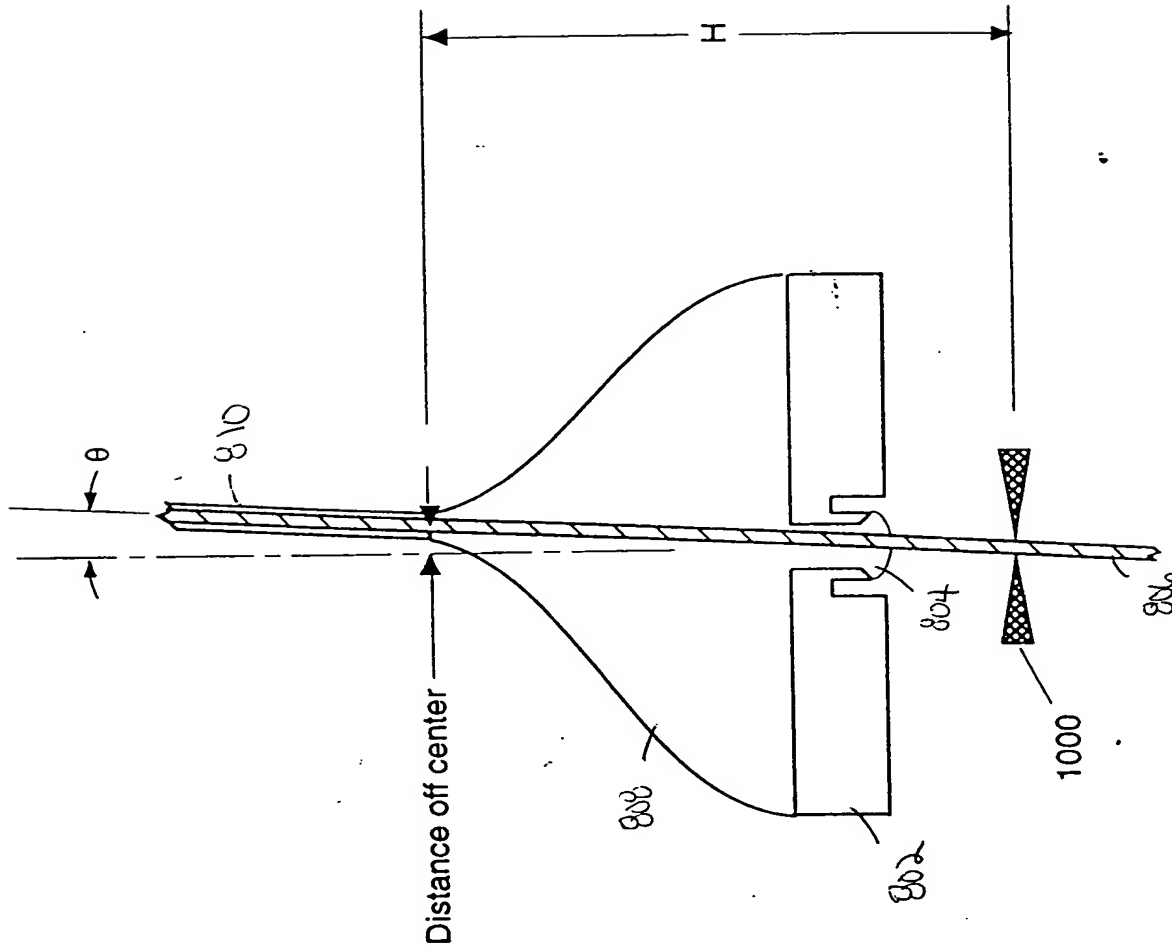


Figure 10. Growth of ribbon from a mesa at a slight angle to the vertical.

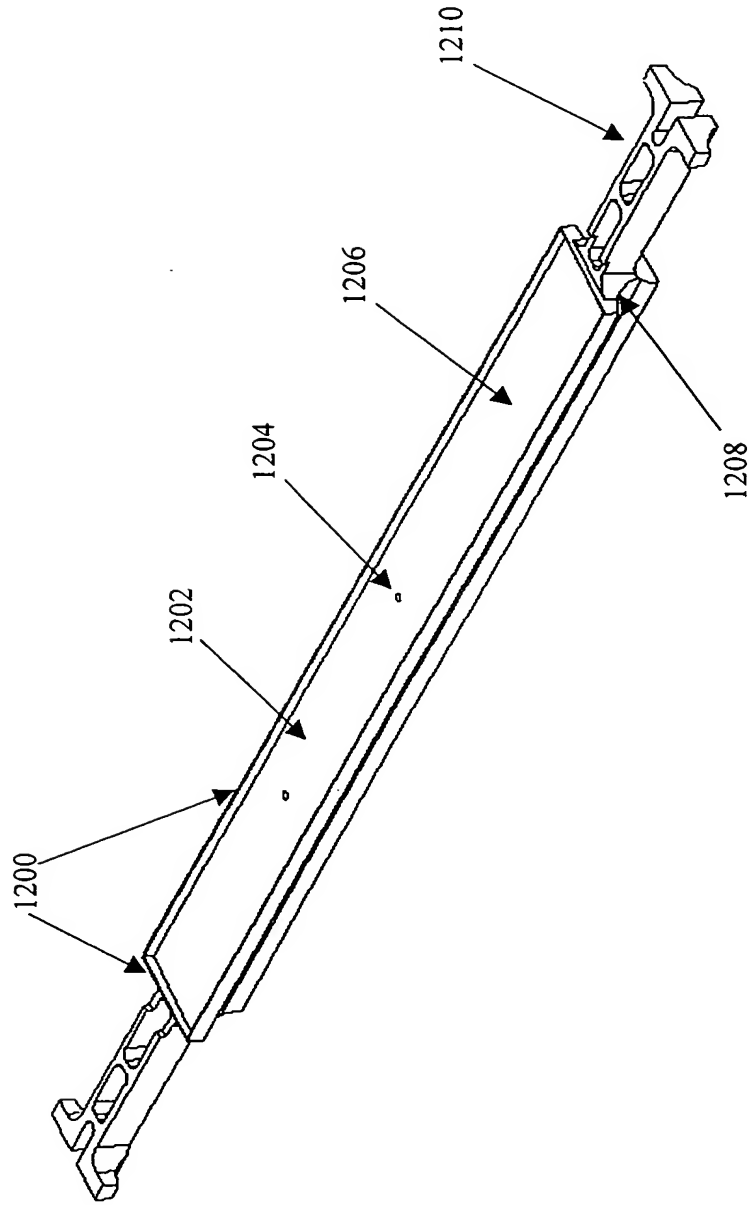
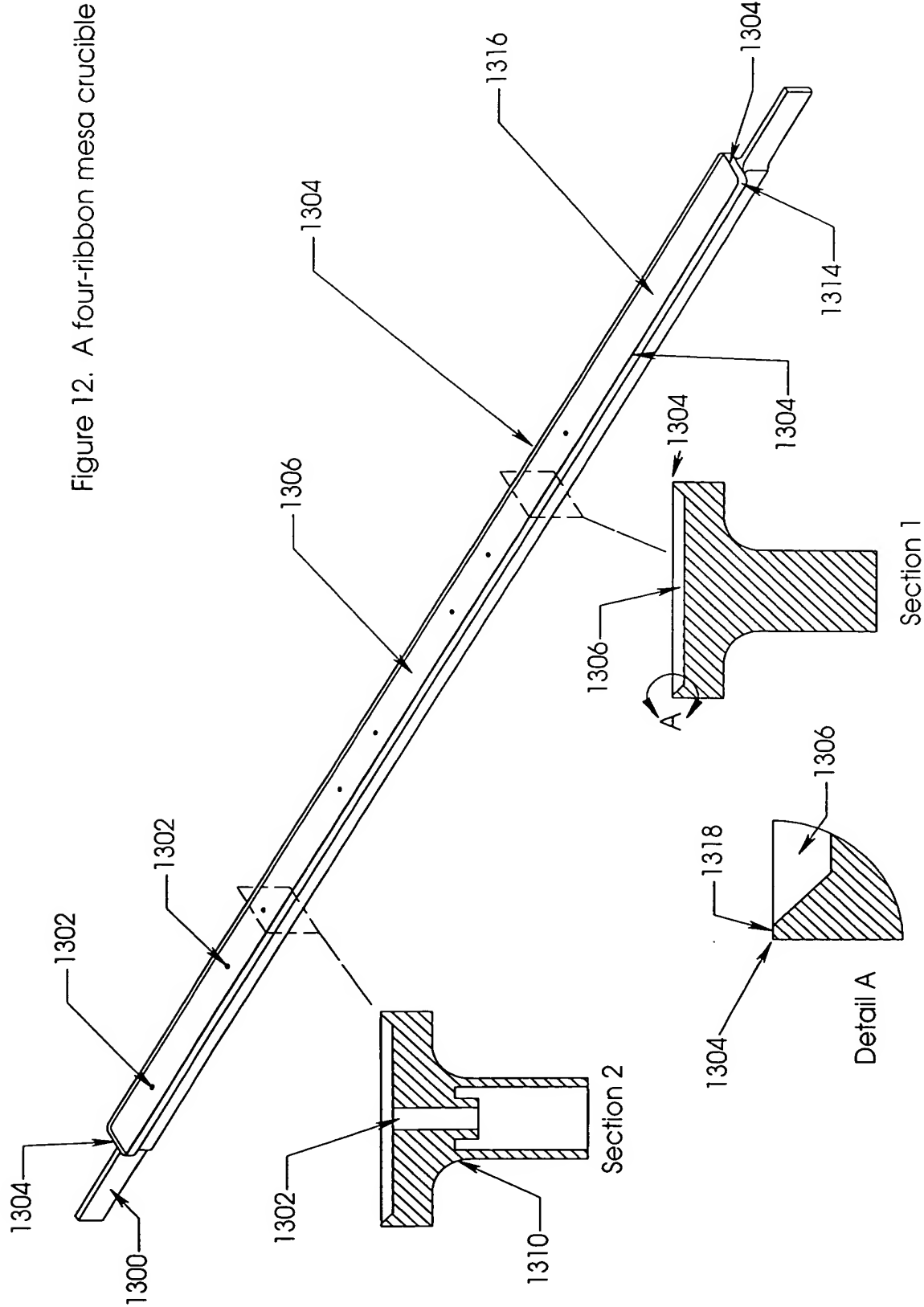
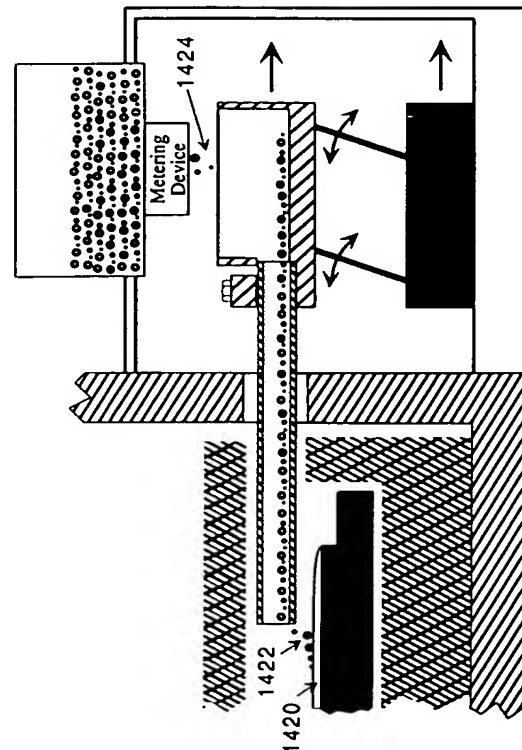
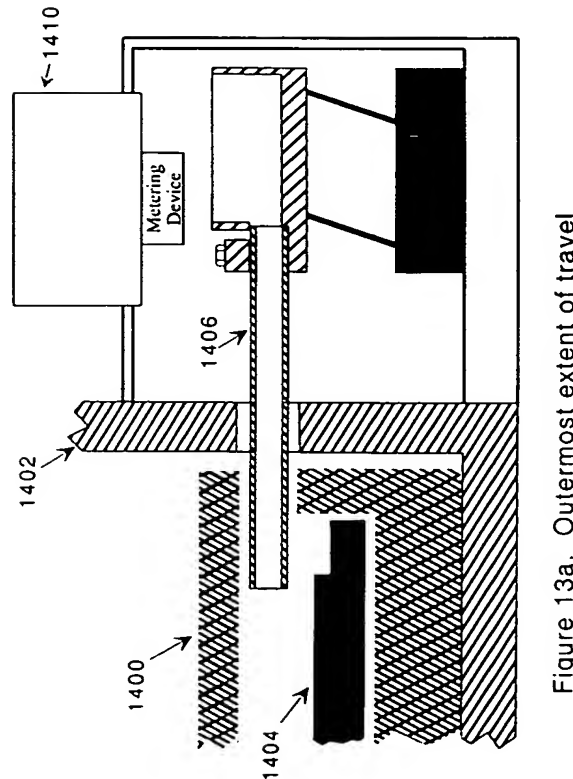
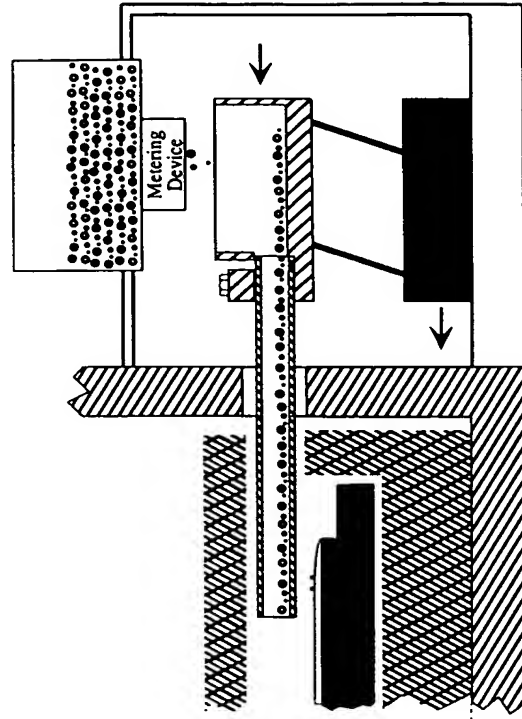
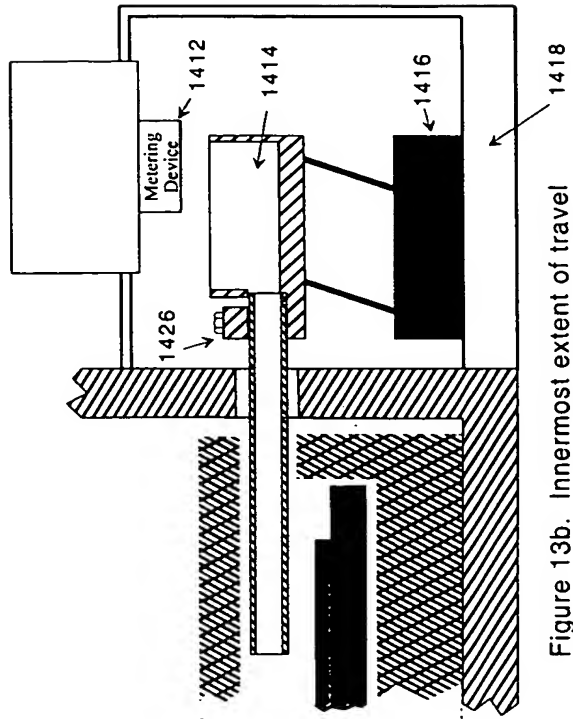


Figure 11. A mesa crucible in isometric view.

Figure 12. A four-ribbon mesa crucible





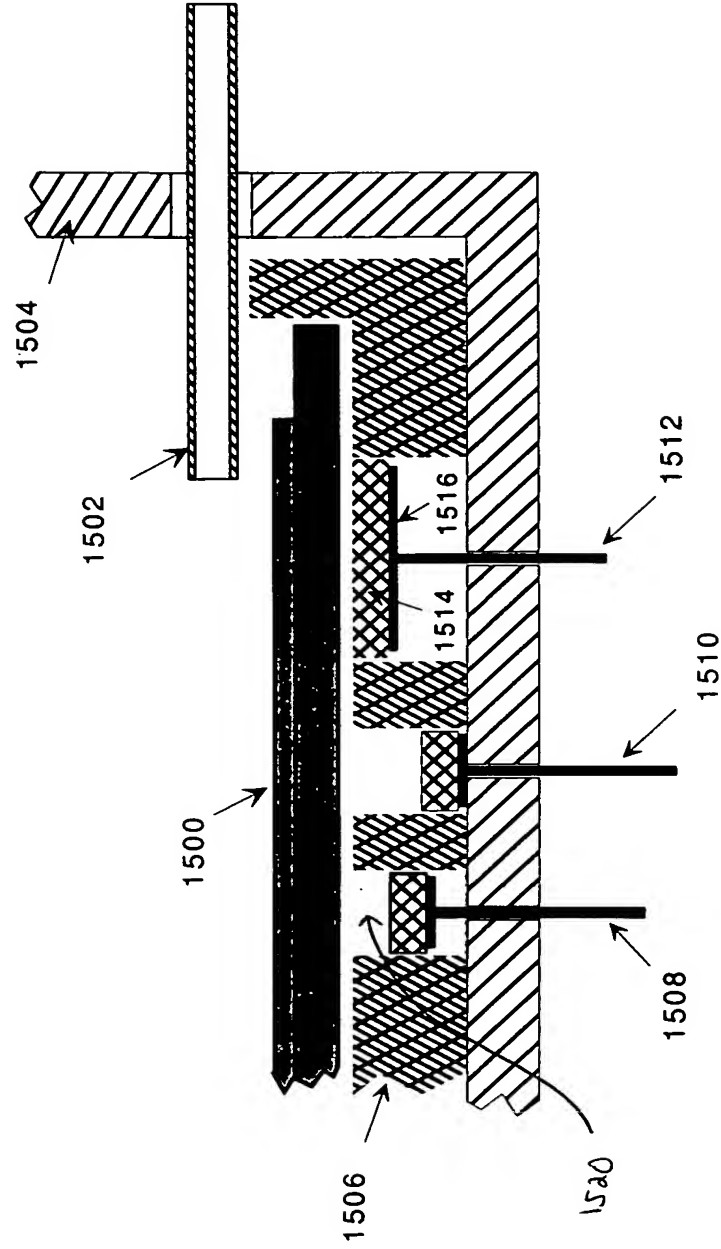


Figure 14. Temperature Control Through Moving Insulation